Gaming for landscape planning: A Participatory Tool for a Shared Conservation Agenda and Fire Risk Prevention

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ABSTRACT – This study aims to know how people plan land use taking into account uncertainty due to fire in the Chiquitano dry and Amazonian moist forests of Bolivia. In these regions, local people's livelihood depends greatly on forest, but fire and concomitant effects of climate change and migration are threatening biodiversity and ecosystem services. Burning forest patches is the common way to prepare land for cropping, but usually it goes beyond control creating extensive forest fires. There is a need to create a common environmental agenda among locals and newcomers to save remnant forest and biodiversity. We used a participatory approach as a reflexive tool to answer the following questions: What are land use expectations across different groups "local" vs "newcomers" and gender "women vs men"? What are the key issues that prevents or encourage a shared conservation agenda? We applied a game approach to simulate landscape (dry and moist forest) where people decide activities, number of ha, type of management, and risk to forest cover because of using fire to clear land. Game board is a grid resembling a landscape that players use for their livelihood. In the game group of men and women play roles of a family deciding how to clear land. A dice is thrown to simulate risk of fire spread. Players win points base on forest cover retention. They lose point based on chances of fire spread. Results showed game is a useful tool to set common grounds for landscape planning. It showed how individual choices can affect overall community, especially with respect to fire spread. The agribusiness and conservation visions coexisted across groups, but agribusiness as a panacea was more evident in newcomers. Women leaned to a diverse portfolio rather than agribusiness only, though there were exceptions. The game helped to understand contradictory land tenure and land use rules that had relation with fires. Simulation of fire percolation across landscape served to discuss norms and actions to prevent fire. Overall, the game shows loopholes in forest protection in Bolivia that needs to incorporate people's voices in land use planning policy.

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